

ABSTRACT

In a phase shift mask blank comprising a transparent
5 substrate and a phase shift film thereon, after the phase
shift film is formed on the substrate, it is surface treated
with ozone water having an ozone concentration of at least 1
ppm. The resulting phase shift film is of quality in that
it experiences minimized changes of phase difference and
10 transmittance upon immersion in chemical liquid during
subsequent mask cleaning step or the like.